



PATENT

IFW

Case Docket No. ASMMC.032DV1

Date: May 27, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Hujanen et al.
App. No. : 10/781,574
Filed : February 17, 2004
For : METHOD OF DEPOSITING
THIN FILMS FOR MAGNETIC
HEADS
Examiner : Unknown
Group Art Unit : 1773

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

May 27, 2004

(Date)

Andrew N. Merickel, Reg. No. 53,317

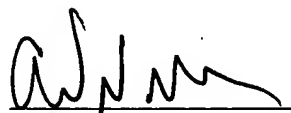
TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir: . . .

Enclosed for filing in the above-identified application are:

- (X) An Information Disclosure Statement.
- (X) A PTO Form 1449 with forty-two (42) references that are not included.
- (X) The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.
- (X) Return prepaid postcard.


Andrew N. Merickel
Registration No. 53,317
Attorney of Record
Customer No. 20,995
(415) 954-4114

**INFORMATION DISCLOSURE STATEMENT**

Applicant : Hujanen et al.
App. No. : 10/781,574
Filed : February 17, 2004
For : METHOD OF DEPOSITING THIN FILMS
FOR MAGNETIC HEADS
Examiner : Unknown
Group Art Unit : 1773

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is form PTO-1449 listing 42 references that are of record in U.S. patent application No. 10/136,095, filed April 30, 2002, which is the parent of this divisional application, and is relied upon for an earlier filing date under 35 U.S.C. § 120. Copies of the references are not submitted pursuant to 37 C.F.R. § 1.98(d).

This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required in accordance with 37 C.F.R. § 1.97(b)(3). If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: May 27, 2004

By: 

Andrew N. Merickel
Registration No. 53,317
Attorney of Record
Customer No. 20,995
(415) 954-4114

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
ASMMC.032DV1APPLICATION NO.
10/781,574INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

(USE SEVERAL SHEETS IF NECESSARY)

APPLICANT
Hujanen et al.FILING DATE
February 17, 2004GROUP
1773

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1.	5,780,175	7/14/98	Chen et al.			
	2.	5,939,334	8/17/99	Nguyen et al.			
	3.	5,998,048	12/7/99	Jin et al.			
	4.	6,006,763	12/28/99	Mori et al.			
	5.	6,143,658	11/7/00	Donnelly, Jr. et al.			
	6.	6,144,060	11/7/00	Park et al.			
	7.	6,404,191 B2	6/11/02	Daughton et al.			
	8.	6,478,931 B1	11/12/02	Wadley et al.			
	9.	6,617,173	09/09/03	Sneh			
	10.	6,551,399 B1	04/22/03	Sneh et al.			
	11.	4,058,430	11/15/77	Suntola et al.	156	611	11/25/75
	12.	5,711,811	01/27/98	Suntola et al.	118	711	11/28/95
	13.	5,916,365	06/29/99	Sherman	117	92	08/16/96
	14.	6,128,160	10/03/00	Yamamoto	360	113	04/24/98
	15.	6,153,062	11/28/00	Saito et al	204	192.2	12/10/98
	16.	6,342,277	01/29/02	Sherman	427	562	04/14/99

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	17.	JP 62221102	9/29/87	Japan			Abstract	
	18.	WO 02/09126 A2	7/18/01	PCT				
	19.	WO 02/09158 A2	7/18/01	PCT				
	20.	WO 00/38191	06/29/00	PCT				
	21.	WO 01/88972 A1	11/22/01	PCT				

EXAMINER
INITIAL

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

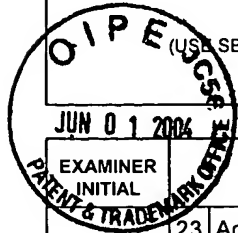
22. XP-002223616, "5th Asian Symposium on Information Storage Technology (ASIST), Hong Kong, China, November 14-16, 2000.

EXAMINER

DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. ASMMC.032DV1	APPLICATION NO. 10/781,574
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)		APPLICANT Hujanen et al.	
		FILING DATE February 17, 2004	GROUP 1773



OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)	
23.	Addison, C. C. et al., "The Vapour Pressure of Anhydrous Copper Nitrate, and its Molecular Weight in the Vapour State," J. Chem. Soc., pp. 3099-3106 (1958).
24.	Akerman, J. J. et al., "Identifying Tunneling in Ferromagnetic-Insulator-Ferromagnetic Thin Film Structures," World-wide web, physics.ucsd.edu/ksgrp/Tunneling.html, pp. 1-6.
25.	Bobo, J. F. et al., "Spin-dependent tunneling junctions with hard magnetic layer pinning," <u>Journal of Applied Physics</u> , Vol. 83, No. 11, pp. 6685-6687 (1998).
26.	Daughton, J. M., World-wide web nve.com/otherbiz/mram2.pdf, "Advanced MRAM Concepts," pp. 1-6 (February 7, 2001).
27.	Fereday, R. J. et al., "Anhydrous Cobalt (III) Nitrate," <u>Chemical Communications</u> , p. 271 (1968).
28.	Hsiao, R., "Fabrication of magnetic recording heads and dry etching of head materials" IBM Journal of Research and Development, Vol 43, (1/2): 1999: pgs. 89-102
29.	Imai, Takuji, World-wide web nikkeibp.asiabiztech.com/nea/200008/tech_108675.html, "100 Gbit/Inch HDD Just Around the Corner," pp. 1-6 (August 2000).
30.	Ishikawa et al., "Vapor-Treatment of Copper Surface Using Organic Acids," <u>Materials Researching Society</u> , Spring 2003 Meeting, Symposium E, Session E, Paper E3.28
31.	Nilsen, O. et al., "Thin film deposition of lanthanum manganite perovskite by the ALE process," <u>Journal of materials Chemistry</u> , Vol. 9, pp. 1781-1784 (1999).
32.	Pakrad, C. D., "Pure Tech: Growth of MR/GMR Head Materials," World-wide web, puretechinc.com/tech_papers/tech_papers-4.htm, pp. 1-2 (1999).
33.	Riihela et al., "Low Temperature Deposition of AlN Films by an Alternate Syppy of Trimethyl Aluminum and Ammonia" <u>Chemical Vapor Deposition</u> , 2 (6): pgs. 277-283 (1996)
34.	Ritala et al., "Atomic layer epitaxy - a valuable tool for nanotechnology?," <u>Nanotechnology</u> , Vol. 10, pp. 19-24, (1999)
35.	Suntola, <u>Handbook of Crystal Growth</u> , Vol. 3, Thin films and epitaxy, Part B: Growth mechanisms and dynamics, Chapter 14, pp. 601-663, Hurle, ed. Elsevier Science B.V. (1994).
36.	Ueno et al., "Cleaning of CHF ₃ plasma-etched SiO ₂ /SiN/Cu via structures using a hydrogen plasma, an oxygen plasma, and hexafluoroacetylacetone vapors," <u>J. Vac. Sci. Technology B</u> , Vol. 16, No. 6, pp. 2986-2995, (Nov/Dec 1998)
37.	Utriainen et al., "Studies of metallic film growth in an atomic layer epitaxy reactor using M(acac) ₂ (M = Ni, Cu, Pt) precursors," <u>Applied Surface Science</u> , Vol. 157, pp. 151-158, (2000)
38.	Wang, Shan X., "Advanced materials for Extremely High Density Magnetic Recording Heads," Department of Materials Science and Engineering, Department of Electrical Engineering, Stanford University, Stanford, CA 94305-4045, presentation.
39.	World-wide web megahaus.com/tech/westerndigital/shitepapers/gmr_wp.shtml, "GMR Head Technology: Increased Areal Density and Improved Performance Areal Density," pp. 1-4 (February 2000).
40.	World-wide web semiconductor.net/semiconductor/issues/Issues/1998/feb98/docs/emerging.asp, "GMR Read-Write Heads Yield Data Storage Record," pp. 1-2 (February 1998).
41.	World-wide web stoner.leeds.ac.uk/research/gmr.htm, "Giant Magnetoresistance," pp. 1-6.
42.	World-wide web, pc.guide.com/ref/hdd/op/heads/techGMR-c.html, "Giant Magnetoresistive (GMR) Heads," pp. 1-4.

W:\DOCS\ANMANM-6694.DOC
031504

EXAMINER	DATE CONSIDERED
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.	